CLAIMS

1. Implantable substrate for the healing and/or protection of connecting tissue, preferably cartilage, comprising at least one means for the activation of locally present cells for tissue regeneration and at least one structure for cell invasion *in vivo* and/or for the formation of cell matrix and/or for the release of constituents of the employed means.

2. Substrate according to claim 1 in which the at least one means contains chemotactic factors or differentiating factors and chemotactic factors.

3. Implantable substrate for the healing and/or protection of connecting tissue, preferably cartilage, comprising at least one means which contains differentiating factors and chemotactic factors.

4. Substrate according to claim 1, characterized in that it comprises at least one covering material.

5. Substrate according to claim 2, characterized in that it comprises at least one covering material.

6. Substrate according to claim 1, characterized in that structures comprise at least one constituent (a) to (g):

a) hydrogels

b) sponges, collagen sponges

c) wool/cotton wool made of polysaccharides, cellulose wool, cellulose cotton wool

d) natural or synthetic polypeptides, fibrin, polylysine

e) plaitings, knitted fabrics or woolen structures made of fibers, preferably fibers comprising resorbable polymers

f) cement pastes, acrylate cements, bonding sheets, fibrinogen-covered hyaluronic acid foil, or

g) ceramic materials.

7. Substrate according to claim 2, characterized in that structures comprise at least one constituent (a) to (g):

a) hydrogels

b) sponges, collagen sponges

c) wool/cotton wool made of polysaccharides, cellulose wool, cellulose cotton wool

d) natural or synthetic polypeptides, fibrin, polylysine

e) plaitings, knitted fabrics or woolen structures made of fibers, preferably fibers comprising resorbable polymers

f) cement pastes, acrylate cements, bonding sheets, fibrinogen-covered hyaluronic acid foil, or

g) ceramic materials.

8. Substrate according to claim 1, characterized in that the at least one means contains a biologically active factor, chosen from the group consisting of:

growth and differentiating factors, cellular adhesion molecules, synthetic peptides, cytokines, chemotactic factors and extracellular matrix components.

9. Substrate according to claim 3, characterized in that the at least one means contains a biologically active factor, chosen from the group consisting of:

growth and differentiating factors, cellular adhesion molecules, synthetic peptides, cytokines, chemotactic factors and extracellular matrix components.

10. Substrate according to claim 7, characterized in that the at least one means contains a biologically active factor, chosen from the group consisting of:

growth and differentiating factors, cellular adhesion molecules, synthetic peptides, cytokines, chemotactic factors and extracellular matrix components.

11. Substrate according to claim 1, characterized in that it further comprises an anchoring structure for the anchoring of the substrates in or on the location to be treated.

12. Substrate according to claim 3, characterized in that it further comprises an anchoring structure for the anchoring of the substrates in or on the location to be treated.

13. Substrate according to claim 8, characterized in that it further comprises an anchoring structure for the anchoring of the substrates in or on the location to be treated.

14. Method for the manufacture of implantable substrates for the healing and/or protection of connecting tissue, preferably cartilage, according to claim 1, characterized in that a structure for the formation of cell matrix and at least one means for the activation of locally present cells for the regeneration of tissue are contacted with each other or that differentiating factors and chemotactic factors are contacted with each other.

15. Method for the manufacture of implantable substrates for the healing and/or protection of connecting tissue, preferably cartilage, according to claim 3, characterized in that a structure for the formation of cell matrix and at least one means for the activation of locally present cells for the regeneration of tissue are contacted with each other or that differentiating factors and chemotactic factors are contacted with each other.

16. Method for the manufacture of implantable substrates for the healing and/or protection of connecting tissue, preferably cartilage, according to claim 6, characterized in that a structure for the formation of cell matrix and at least one means for the activation of locally present cells for the regeneration of tissue are contacted with each other or that differentiating factors and chemotactic factors are contacted with each other.

17. Method for the manufacture of implantable substrates for the healing and/or protection of connecting tissue, preferably cartilage, according to claim 8, characterized in that a structure for the formation of cell matrix and at least one means for the activation of locally present cells for the regeneration of tissue are contacted with each other or that differentiating factors and chemotactic factors are contacted with each other.

18. Method for the healing of connective tissue and/or protection thereof, characterized in that the connective tissue is contacted with a substrate according to claim 14.

19. Method for the healing of connective tissue and/or protection thereof, characterized in that the connective tissue is contacted with a substrate according to claim 15.

20. Method for the healing of connective tissue and/or protection thereof, characterized in that the connective tissue is contacted with a substrate according to claim 16.

21. Method according to claim 17, characterized in that the connective tissue is cartilage and that before contacting the cartilage with the substrate, connecting channels into the subchondral space of the cartilage are produced.

22. Method according to claim 18, characterized in that the connective tissue is cartilage and that before contacting the cartilage with the substrate, connecting channels into the subchondral space of the cartilage are produced.

23. Method according to claim 19, characterized in that the connective tissue is cartilage and that before contacting the cartilage with the substrate, connecting channels into the subchondral space of the cartilage are produced.

24. Use of a substrate obtained by a method according to claim 14, in surgical medicine and tissue engineering.

25. Use of a substrate obtained by a method according to claim 15, in surgical medicine and tissue engineering.

26. Use of a substrate obtained by a method according to claim 16, in surgical medicine and tissue engineering.

27. A method for the manufacture of implantable substrates for the healing and/or protection of connecting tissue, said substrate comprising:

a composition comprising biologically active factors (i), (ii), and (iii), wherein

(i) is a growth and differentiating factor,

(ii) is a chemotactic factor, and

(iii) is a cellular adhesion molecule; and

at least one structure for cell invasion in vivo and/or for the formation of cell matrix and/or for the release of constituents of the employed composition, wherein said structure comprises at least one constituent (a) to (f):

(a) a hydrogel,

(b) a compound selected from the group consisting of sponges, collagen sponges,

(c) a compound selected from the group consisting of wool, a cotton wool-like structure, wool made of polysaccharides, cellulose wool, and cellulose cotton wool,

(d) a compound selected from the group consisting of natural or synthetic polypeptides, fibrin, and polylysine,

(e) a compound selected from the group consisting of plaitings, knitted fabrics, woolen structures made of fibers, and fibers comprising resorbable polymers,

(f) a compound selected from the group consisting of cement pastes, acrylate cements, bonding sheets, and fibrinogen-covered hyaluronic acid foil,

comprising at least one of the following steps:

(i) bringing said structure into contact with at least said above defined composition

or

(ii) bringing said biologically active factors (i), (ii), and (iii) of said composition into contact with said above defined structure.

28. The method of claim 27, wherein said connecting tissue comprises cartilage.

29. The method according to claim 27, wherein the step of bringing said substrate into contact with said composition comprises bringing said structure into contact with at least one biologically active factor chosen from the group consisting of synthetic peptides, cytokines, and extra cellular matrix components.

30. The method of claim 29, characterized in that said connecting tissue comprises cartilage.

31. A method of healing and/or protection of connective tissue, comprising contacting said connective tissue with a substrate manufactured according to the method of claim 27.

32. A method of healing and/or protection of connective tissue, comprising contacting said connective tissue with a substrate manufactured according to the method of claim 29.

33. The method according to claim 31, wherein said connective tissue comprises cartilage, and the method further includes the step of producing connecting channels into the subchondral space of the cartilage before contacting said connective tissue with said substrate.

34. The method according to claim 32, wherein said connective tissue comprises cartilage, and the method further includes the step of producing connecting channels into the subchondral space of the cartilage before contacting said cartilage with said substrate.